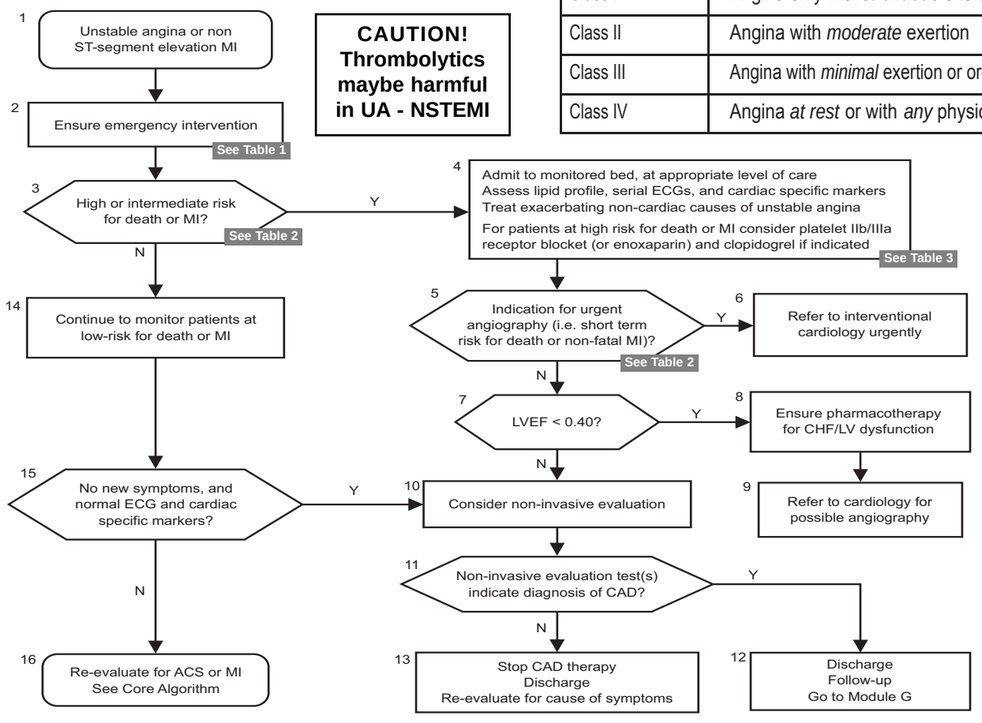
VA/DoD Clinical Practice Guideline
Management of Ischemic Heart Disease (IHD)
Module B

Pocket Guide
Suspected Acute Coronary Syndrome
Unstable Angina/NSTEMI

For initial Evaluation – CORE, Management of AMI, and Follow-Up of Patient with IHD, See Respective Pocket Guides

Patients who present with: 1) rest angina; 2) new onset of severe angina; & 3) increasing angina to at least CCS Class III severity



CAUTION! Thrombolytics maybe harmful in UA - NSTEMI

Canadian Cardiovascular Society Classification of Angina	
Class I	Angina only with *strenuous* exertion
Class II	Angina with *moderate* exertion
Class III	Angina with *minimal* exertion or ordinary activity
Class IV	Angina *at rest* or with *any* physical activity

Table 1: Emergency Interventions

- Triage patients with possible acute MI or unstable angina for evaluation and treatment
- Initiate O_2, intravenous access and continuous ECG monitoring
- Institute advanced cardiac life support (ACLS), if indicated
- Obtain 12-lead electrocardiogram (ECG)
- Perform expedited history & physical to:
  - R/O alternative catastrophic diagnoses (Pericarditis, Pericardial tamponade, Thoracic aortic dissection, Pneumothorax, Pancreatitis, & Pulmonary embolus)
  - Elicit characteristics of MI
  - Contraindications to reperfusion therapy
- Administer the following:
  - Non-coated aspirin (160 to 325 mg).
  - Nitroglycerin (spray or tablet, followed by IV, if symptoms persist).
  - Beta-blockers in the absence of contraindications
  - Oral ACE-inhibitors in the absence of contraindications
  - Intravenous fractionated heparin if indicated
- Ensure adequate analgesia (morphine, if needed)
- Obtain serum cardiac markers (troponin or CK-MD)
- Identify and treat other conditions that may exacerbate symptoms

Increased Risk for Complications or Death Following a MI

- Recurrent angina (spontaneous or inducible)
- Congestive heart failure (CHF)
- Polymorphic ventricular tachycardia, ventricular fibrillation, or sustained monomorphic ventricular tachycardia more than 48 hours from presentation
- Prior MI
- Ejection fraction (EF) <0.40
- Associated severe mitral or aortic valvular disease (e.g., aortic stenosis, aortic regurgitation, or mitral regurgitation)

MANAGEMENT OF UNSTABLE ANGINA/NSTEMI

- Ensure emergency intervention
- Assess the short-term risk of death or MI See Table 2
- Admit to appropriate level of care
- Initiate antithrombotic and antiplatelet therapy as indicated
  - (ASA, heparin, enoxaparin, GP IIba/IIIa, clopidogrel)
- Refer to urgent angiography, if indicated
- Consider non-invasive evaluation (cardiac stress test and LV function) in patients not undergoing angiography
- Initiate ACE inhibitor therapy
- Ensure pharmacologic therapy for ischemia, angina, and CHF
- Discharge patient to home with appropriate follow-up.

THE DISTINCTION BETWEEN ACUTE MI (STEMI OR LBBB) AND UA AND NSTEMI IS IMPORTANT!

- Immediate reperfusion, with either primary angioplasty or thrombolytic agents, has been shown to reduce mortality in patients with STEMI or LBBB MI
- **The use of thrombolytics may be potentially harmful in UA and NSTEM**

VA access to full guideline: http://www.oqp.med.va.gov/cpg/cpg.htm
DoD access to full guideline: http://www.QMO.amedd.army.mil
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Table 2: Short-Term Risk of Death or Non-Fatal MI in Patients with UA

	High Risk	Intermediate Risk	Low Risk
Feature	*At least 1 of the following features must be present.*	*No high-risk feature, but one of the following features must be present.*	*No high- or intermediate- risk feature, but any of the following*
History	• Accelerating tempo of ischemic symptoms in the preceding 48 hours	• Prior MI, peripheral or cerebrovascular disease, or coronary artery bypass graft (CABG) • Prior aspirin use	
Character of Pain	• Prolonged ongoing rest pain (>20 minutes)	• Prolonged rest angina (>20 minutes), now resolved, with moderate or high likelihood of coronary artery disease (CAD) • Rest angina (<20 minutes or relieved with rest or sublingual NTG)	• New-onset CCS Class III or IV angina in the past 2 weeks without prolonged rest pain (>20 minutes), but with moderate or high likelihood of CAD
Clinical Findings	• Pulmonary edema, most likely related to ischemia • New or worsening mitral regurgitation (MR) murmur • S3 or new/worsening rales • Hypotension, bradycardia, or tachycardia • Age>75 years	• Age >70 years	
ECG Findings	• Angina at rest with transient ST-segment changes >0.05 mV • BBB, new or presumed new • Sustained ventricular tachycardia	• T-wave inversions >0.2 mV • Pathological Q-waves	• Normal or unchanged ECG during an episode of chest discomfort
Cardiac Markers	• Elevated (e.g., TnT or TnI >0.1 μg/mL)	• Slightly elevated (e.g., TnT >0.01, but <0.1 μg/mL)	• Normal

Table 3: FOR SHORT-TERM HIGH RISK PATIENTS Consider Use of Glycoprotein IIb/IIIa Inhibitors for the Following:

	Predictor Variables: Add 1 point to score for every variable (Maximum score = 7)
1	Age ≥ 65 years
2	At least 3 risk factors for CAD (smoking; hypertension, hyperlipidemia, diabetes; family history of CAD)
3	ST-deviation (ST depression ≥ .05 mV)
4	Two or more anginal events in the last 24 hours
5	Two or more anginal events in the last 24 hours
6	Elevated serum cardiac marker
7	Use of aspirin in the preceding 7 days

Score ≥ 3 Use enoxaparin or glycoprotein IIb/IIIa inhibitor, plus unfractionated heparin
Score < 3 Use enoxaparin or unfractionated heparin

Patients with continuing ischemia,

Patients for whom PCI is planned.

Patient at high-risk for death or MI,
- elevated cardiac markers,
- ST-depression,
- recurrent symptoms on therapy

Biochemical Cardiac-Markers for the Evaluation and Management of Patients Suspected of Having an ACS, but Without ST-Segment Elevation of 12 Lead ECG (ACC/AHA UA - NSTEMI, 2000)

Marker	Advantage	Disadvantages	Clinical Recommendations
Cardiac Troponins	• Powerful tool for risk stratification. • Greater sensitivity and specificity than CK-MB. • Detection of recent MI up to 2 weeks after onset. • Useful for the selection of therapy. • Detection of reperfusion.	• Low sensitivity in very early phase of MI (i.e., <6 hours after onset of symptoms) and requires a repeat measurement at 8 to 12 hours, if negative • Limited ability to detect the late minor reinfarction.	• Useful as a single test to efficiently diagnose NSTEMI (including minor myocardial damage), with serial measurements; clinicians should familiarize themselves with diagnostic "cutoffs" used in their local hospital laboratory. • Data on diagnostic performance and potential therapeutic implications are increasingly available from clinical trials.
CK-MB	• Rapid, cost-efficient, accurate assays. • Detection of early reinfarction.	• Loss of specificity in the setting of skeletal muscle disease or injury, including surgery. • Low sensitivity during very early MI (i.e., <6 hours after onset of symptoms) or later after onset of symptoms (i.e., >36 hours) and for minor myocardial damage (detectable by troponins).	• Prior standard and still acceptable diagnostic test in most clinical circumstances. • Familiar to the majority of clinicians.
CK-MB Isoforms	• Early detection of MI.	• Specificity profile is similar to CK-MB. • Current assays require special expertise.	• Useful for extremely early detection of MI (i.e., 3 to 6 hours after onset of symptoms) in centers with demonstrated familiarity with the assay technique. • Experience to date is predominantly in dedicated research centers.
Myoglobin	• High sensitivity. • Early detection of MI. • Detection of reperfusion • Most useful in ruling out MI.	• Very low specificity in the setting of skeletal muscle injury or disease. • Rapid return to normal range limits sensitivity, for later presentations.	• Should not be used as the only diagnostic marker, because of a lack of cardiac specificity. • A more convenient early marker than CK-MB isoforms because of greater availability of assays for myoglobin. Rapid-release kinetics make myoglobin useful for the non-invasive monitoring of reperfusion in patients with established MI.